

# Code of Good Practice For Landspreading Paper Mill Sludges

**Revised October 2024**



*Paper - the sustainable, renewable choice*

Chapter		Page
1.	Objective of the Code	3
2.	Introduction	4
3.	Paper Sludges: Benefits & Risks	5
4.	Legislative Framework	6
5.	Permit Application	9
6.	Good Practice:	10
	a. Farmer Liaison	
	b. Transport	
	c. Risk assessments & sensitive receptors	
	d. Sludge storage, site assessments and landspreading	
	e. Contract	
	f. Emergency procedures	
	g. Notifications	
	h. Environmental Management System	
	i. Audits	
7.	Additional Information	14

The Code is a revision of an original produced by The Paper Federation of Great Britain in 1998. This revision has been produced by the Process Issues Committee of CPI. Those mills most actively involved in landspreading were represented and leading practitioners of landspreading paper mill sludges were consulted during the process, including contractors and regulators.

The information provided within this document was accurate at the date given below. CPI cannot accept any liability in relation to its use.

Enquiries arising from the Code should be addressed to:

Confederation of Paper Industries  
Kingston House  
Lydiard Fields  
Swindon  
Wiltshire  
SN5 8UB

*Date of Publication: March 2014*  
*Revised: October 2024*

## 1. Objective of the Code

The objective of the Code of Practice is to define best practice for landspreading sludges from the UK Paper Industry. It is not a legal document, but it highlights the key legal requirements.

The Code provides the basis for the activity to be managed professionally and responsibly, so ensuring that this option continues to be recognised as a “sustainable practice”.



1. The Confederation of Paper Industries (CPI) is the trade association for the Paper Industry in the UK and has within its Membership paper manufacturers, corrugated packaging manufacturers and mill-owned and independent recovered paper merchants and exporters. The UK manufactures just under 3.4 million tonnes of paper each year, with over 40 paper mills still in production. Around 19,000 people are employed directly by the sector. With over 9 million tonnes of paper consumed annually in the UK, manufacture of pulp & paper should be well placed to play an important role in the growth envisaged for the manufacturing sector.
2. Paper sludge or crumble is a by-product of the paper recycling and manufacturing process and consists mostly of short wood fibres (cellulose) and clay fillers. Paper sludges are derived primarily from the recycling of waste paper. Estimated production of paper sludge in the UK is around 346,000 tonnes (dry weight).
3. Whilst this Code covers landspreading as a recovery option, it must be emphasised that the principle aim should be to achieve the waste hierarchy objectives of minimise, then recover/recycle.
4. Paper mills have been spreading sludges on agricultural land for more than 30 years and over that period have demonstrated that this practice has proven agricultural benefit when managed properly. This Code uses this experience to identify the best management practices, in conjunction with Environment Agency Guidance, in the landspreading of paper mill sludges and management of the landspreading process.
5. This Code is aimed at those who have a practical involvement in landspread operations. Mills may contract out this operation at any point. The requirements of the regulations and this Code will apply equally to mill personnel and contractors.
6. This Code links to the key requirements of the law. It does not replace them. This Code and any supporting procedures should be linked into the mill environmental management system.
7. For the purposes of the Code, Paper Mill Sludge includes all sludges produced from papermaking operations, including de-inking, primary and/or secondary effluent treatment processes (EWC Codes 03 03 05, 03 03 10 & 03 03 11).
8. This Code is directed at sludges spread on agricultural land. (Other pulp & paper mill wastes may be landspread but are not covered by this Code: 03 03 01 waste bark and wood, pulp from virgin timber, and 03 03 09 Lime mud waste).
9. Contacts for sources of further help and information are given, where relevant, within the body of this Code and in the Additional Information Section at the end.
10. The Code of Practice is supported by the following reports:
  - SAC Report "The Application of Papermill Sludge to Agricultural Land" commissioned by the CPI (Paper Federation). The report includes an overview of factors affecting soil fertility, potential environmental risks and common benefits of spreading paper mill sludges.
  - Landspreading on agricultural land: nature and impact of paper wastes applied in England & Wales, Science report SC030181/SR August 2005 commissioned by the Environment Agency containing information on the extent, nature and environmental implications of applying paper mill sludges to agricultural land in England & Wales.
  - EQual Paper Sludge field trials; Summary Report February 2015 LIFE10 ENV/UK/176 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/459496/PS\\_field\\_trial\\_summary\\_report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/459496/PS_field_trial_summary_report.pdf). The report concludes "The PS field trials demonstrated the agricultural benefit of PS as a valuable liming material and soil conditioner" whilst highlighting "the need to follow good agricultural practice in particular, the Confederation of Paper Industries Code of Practice".
11. Copies of the Code of Practice will be available to the Environment Agency (EA), National Resources Wales (NRW), the Scottish Environment Agency (SEPA), Local Authorities and other interested parties.

1. Paper sludge or crumble contains short cellulose fibres which are not suitable for use in paper production. Sludge from recycling processes also contains mineral components such as kaolin, talc and calcium carbonate, along with trace ink residues and nutrients.
2. Whilst the same in principle, papermaking processes are diverse and the resulting sludge from each mill can differ. Hence the benefits from landspreading paper sludges are unique to each mill. It is incumbent upon each mill to define the benefits of their particular sludge application.
3. As with any other application of material to land, proprietary or otherwise, correct application is essential to realise the benefits and prevent any detriment.
4. Key benefits of paper sludge application to land are outlined below. Not all are applicable to every sludge. Potential risks from incorrect application are also highlighted.



### Benefits

5. Paper sludges have an organic matter content, generally around 50% dry weight. Organic matter can make a significant contribution to the physical structure and biological nature of the soil. Application of sludges can lower the bulk density of the soils, increase moisture availability and improve drainage.
6. Additions can also improve nutrient cycling and soil fertility, increasing biological activity in the soil and improving the size of the microbial and faunal population.
7. Sludges are generally slightly alkaline, and with their chalk/clay filler content have a liming value.
8. Sludges can, in some instances, supply nutrients, in particular phosphorus, potassium and sulphur.



### Risks

9. Paper sludges generally have a high carbon to nitrogen ratio, which can lead to nitrogen immobilisation if not balanced or applied in a controlled manner. This risk can turn into a benefit when used to mop up high levels of nitrogen from other applied organics.
10. Chemical elements such as cadmium, copper, lead, nickel can be present in sludges although in most circumstances their concentrations are likely to be extremely low.
11. Paper sludges can contain phosphorus which, although a benefit in some cases, can be a potential risk in areas where there is a high P Index in the soil (>4) and an issue with high phosphate levels in the local watercourse.

NOTE: Environmental Permitting Regulations only apply to England and Wales. Landspreading in Scotland is under an exemption from Waste Management Licensing (See regulatory links in "Additional Information").

1. The Environmental Permitting (England & Wales) 2016 Regulations can be downloaded from <https://www.legislation.gov.uk/uksi/2016/1154/contents/made>
2. Landspreading of sludges is regulated through the Environmental Permitting Regime (EPR) which requires operators to obtain a permit and then a site specific deployment in order to spread material to land. The landspreading permit is a one-off and attracts an application fee. The cost of deployment is based on a banded scale according to the EA classification of risk. The Permit provides for ongoing supervision by regulators.
3. The main EA guidance for Landspreading when you have a landspreading permit: how to comply with your environmental permit - provides operators with specific guidance on how to take control of any risks to health and the environment and, in so doing, how to comply with the environmental permit. The guidance note forms the basis of this Code of Practice. The guidance note should be used to prepare an application. The guidance note provides Information on the standard rules in the permit and the minimum standards operators must meet to show they are complying with their permit. The guidance is available here: <https://www.gov.uk/government/publications/landspreading-how-to-comply-with-your-permit/landspreading-how-to-comply-with-your-environmental-permit>
4. The other EA guidance is Landspreading to improve soil health: How to meet the requirements of using mobile plant for landspreading waste to provide agricultural benefit or ecological improvement. This guidance is mainly for operators with a mobile plant landspreading permit and deployment.

You can spread waste to land to improve soil health. This can help reduce the need to use manufactured fertilisers and quarried soil conditioners. Spreading waste to land must:

- be controlled by an environmental permit, regulatory position statement, low risk waste position or waste exemption
- result in agricultural benefit or ecological improvement
- be waste recovery, not waste disposal

The guidance is available here: <https://www.gov.uk/guidance/landspreading-to-improve-soil-health>

5. There are two types of permit available: Standard and Bespoke. A Standard Permit is a simple permit that requires the permit holder to abide by a set of standard rules. Each category of activity has its own fixed set of rules, previously consulted on with industry by the EA. As they are part of a standardised system, these Standard Permits are quicker to apply for, involve simpler processing and have clear guidance.
6. Landspread of sludges is covered by a Standard Permit. The Standard Rules that apply are SR2010 No.4 Mobile Plant for Landspreading. These rules cover land treatment resulting in benefit to agriculture or ecological improvement. <https://www.gov.uk/government/publications/sr2010-no4-mobile-plant-for-land-spreading>

7. Paper wastes with EWC codes 03 03 05, 03 03 09, 03 03 10 & 03 03 11 may also be used for the reclamation, restoration or improvement of land again under a Standard Permit. The Standard Rules that apply are SR2010 No.5 mobile plant for the reclamation, restoration or improvement of land. The Code does not apply directly to this in its detail, but the spirit and principles should apply. The rules can be downloaded here: <https://www.gov.uk/government/publications/sr2010-no5-mobile-plant-for-reclamation-restoration-or-improvement-of-land>
8. Landspread operators need to be aware of the requirements for operating within a Nitrate Vulnerable Zone (NVZ). A number of the key requirements for operating within an NVZ are covered in the SR2010 No.4 permit and therefore apply whether the material is spread inside or outside of an NVZ. Suppliers should, however, be familiar with any **additional** requirements prescribed by the NVZ regulations/guidance to support farmers in complying. Additional requirements include the N Max limits. Operators need to be able to provide farmers with information on the availability of nitrogen in the paper sludge, to allow the farmer to comply with N max limits. Field stockpiles are required to be constructed in a manner that is "... as compact as reasonably possible...". The stockpile should take up as little ground area as is safely possible without risk of it collapsing. Also on land that slopes at 12 degrees (1 in 5 / 20%) or greater, stockpiles should be sited at least 30 meters from a watercourse. Operators should familiarise themselves with the current NVZ guidance document prior to undertaking work within an NVZ. <https://www.gov.uk/government/collections/nitrate-vulnerable-zones>
9. The Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations, came into force in 2018. These are commonly called the Farming Rules for Water (FRfW) and can be accessed <https://www.legislation.gov.uk/uksi/2018/151/made>. The regulations are aimed at managing pollution from the application of organic manures and fertilisers.
10. Guidance on the FRfW for farmers and land managers to prevent water pollution can be found <https://www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution>. The FRfW require a land manager to plan each application of organic manure or manufactured fertiliser to agricultural land so that it does not exceed the needs of the soil and crop on the land receiving the material. As the regulation includes the example of paper crumble, this means a land manager who accepts paper sludges onto their land for spreading is required to meet the FRfW.
11. In addition to an environmental permit, landspreading of sludges is also covered by Duty of Care with respect to the transport and transfer of the sludges. Section 34 of the Environmental Protection Act 1990 defines "Duty of Care" responsibilities for "any person who imports, produces, carries, keeps, treats or disposes of controlled waste". Obligations under the Duty of Care require "every reasonable effort" to be made to ensure that there is correct and safe handling of the sludges and sufficient records need to be kept to enable an audit trail to take place. The Environmental Protection (Duty of Care) Regulations 1991 can be downloaded via: [www.opsi.gov.uk/si/si1991/Uksi\\_19912839\\_en\\_1.htm](http://www.opsi.gov.uk/si/si1991/Uksi_19912839_en_1.htm).

The necessary steps to comply with these regulations are outlined in **Waste Management The Duty of Care A Code of Practice** which can be downloaded via:

For England & Wales:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1073585/Waste\\_duty\\_of\\_care\\_code\\_of\\_practice.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1073585/Waste_duty_of_care_code_of_practice.pdf)

For Scotland:

[https://www.sepa.org.uk/media/162520/duty\\_of\\_care\\_recycling.pdf](https://www.sepa.org.uk/media/162520/duty_of_care_recycling.pdf)

### Links to further information

Environmental permitting on GOV.UK:

<https://www.gov.uk/topic/environmental-management/environmental-permits>

NetRegs in Scotland:

<https://www.netregs.org.uk/>

Defra: Nitrate Vulnerable Zones (with links to Guidance & Regulation)

<https://www.gov.uk/government/collections/nitrate-vulnerable-zones>

### Other Regulatory Guidance and related Codes

Protecting our water, soil and air – a code of good agricultural practice for farmers, growers and land managers:

[www.gov.uk/government/publications/protecting-our-water-soil-and-air](http://www.gov.uk/government/publications/protecting-our-water-soil-and-air)

Defra Fertiliser Manual RB209

[www.gov.uk/government/publications/fertiliser-manual-rb209](http://www.gov.uk/government/publications/fertiliser-manual-rb209)

Managing waste / Duty of Care (Defra)

[www.gov.uk/managing-your-waste-an-overview/overview](http://www.gov.uk/managing-your-waste-an-overview/overview)



Operators should apply for a Standard Permit for landspreading paper sludges. In order to do this, the operator must comply with the Standard Rules SR2010 No.4 Mobile Plant for Landspreading:

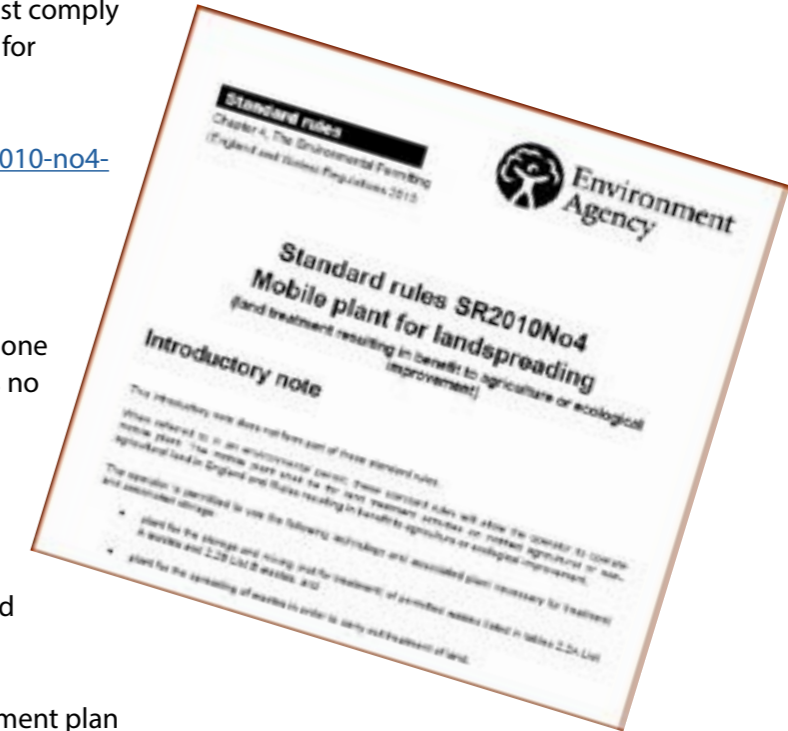
<https://www.gov.uk/government/publications/sr2010-no4-mobile-plant-for-land-spreading>

and meet the following risk criteria:

- No more than 3000 tonnes to be stored at any one time and for no longer than 12 months; Of this no more than 1250 tonnes shall be non-stackable waste
- Landspreading must not be carried out within 10m of any watercourse or 50m of any spring, well or borehole
- The quantity of sludge applied does not exceed 250 tonnes per hectare (or lower if specified)
- on the deployment form
- The operator shall maintain an odour management plan
- Waste must not be spread on land if: i. the land has been frozen for 12 hours or more in the preceding 24 hours ii. the land is waterlogged, frozen or snow covered

The permit details requirements for monitoring, benefit assessment and deployment notification as per the Standard Rules above.

The Operator, for the purposes of the permit, is defined as the “person who has control over the operation...”. This can be the Mill or it may choose to contract out all or part of the operation. Mills should ensure that contractors are competent as per the guidance and that **any contract has clearly defined roles and responsibilities**, particularly in relation to any permit requirements.



**a. Farmer Liaison**

Before any site assessment is made, the farmer (landowner or tenant) should be informed by either the mill or the contactor of:

- The potential benefits of applying sludge to land;
- The process of the landspread activity and follow up assessments;
- Contact details - ongoing and emergency;
- Responsibilities of all parties under the permit and duty of care, including, where appropriate, when, how and by whom the sludge application will be incorporated;
- Within an NVZ, information on the availability of nitrogen.

The information required from the farmer must be clearly defined and should include:

- Any physical characteristics of the site which would affect the spreading of sludge (e.g. areas of poor drainage, heavy textured or stony soils, adverse ground stability or topography, etc.);
- The location of land drains, springs, wells and boreholes, disused mineshafts/workings/adits, swallets (These areas require a no-spread zone around them to prevent any pollution of groundwater);
- The cropping regime;
- Amounts of fertiliser and other waste which have been or are about to be applied to the site;
- Any restrictions that might apply to the land e.g. land entered into Agri-environmental schemes or land on or near to protected sites (Site of Special Scientific Interest (SSSI) Scheduled Ancient Monuments etc.).

The farmer's copy of the site assessment report, if provided, should contain a clear explanation of what the report is, what the information means and how it is relevant to the landspread operation.

The farmer should give written confirmation of receipt of the information and of his awareness of the relevant codes and permit requirements, particularly where the farmer has a specific responsibility for incorporating the paper sludge or any other action in the spreading operation. The farmer should also give written approval for the sludge to be spread, along with an assurance that no other non-agricultural waste has been or will be applied to the same field within 12 months prior to or following a paper sludge application.

In the case of tenant farmers, they must also confirm that they have the authority to agree for the sludge to be spread and it would be prudent to also get the direct permission of the owner farmer/landlord. This should also include agreement for future access for any follow up assessment.

**b. Transport**

Transport of paper sludge is covered by Duty of Care (see above). The Mill and/or the contractor must ensure that:

- A waste transfer note is issued to cover every load leaving the mill site. "Season Ticket" transfer notes can be used for multiple loads to the same site over a specified period of time. EWC codes must be quoted in the note;
- Records are kept to track every tonne of sludge leaving the mill site and delivered to the landspreading site. These records should be kept in conjunction with the Deployment records under the permit. Records should be kept for a minimum of two years as per the Duty of Care requirements or as specified by your Permit.

Transport best practices include:

- Transport company must be registered as a Waste Carrier;
- Efficient vehicles should be used for transporting the sludge ensuring minimal environmental damage;
- Vehicles must be maintained as legally roadworthy;
- Precautions must be taken to prevent sludge escaping from the vehicle during transportation;
- Routing and scheduling of vehicles should be carried out so as to minimise disturbance to local residents;
- Local bylaws should be checked to identify any other obligations to be met in relation to the transportation or landspreading of the sludge.

**c. Risk assessments and sensitive receptors**

- Care should also be taken to minimise any nuisance effect that could arise as a consequence of the landspreading activity. Potential nuisance causes being:
  - Odour - It should be noted that there is a potential risk of odour from the storage and spreading of sludge. All operators must have an odour management plan covering both storage and incorporation of the sludge, where applicable, to minimise any impact from odour. The EA's Horizontal Guidance H4 gives guidance on Odour Management Plans: <https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management>
  - Mud on the road, here provision should be made to have clean up equipment on standby
  - Routing of vehicles
  - Access to sites: provision must be made not to cause damage, with any repairs effected as soon as possible to any inadvertent damage.
- Consideration should be given to nearby residents in the form of some prior notice and contact details for concerns;
- A complaints procedure should be in place to follow up any problems raised.

**d. Sludge storage, sludge & site assessments and landspreading**

Considerations to mitigate the impact of access to sites include:

- The use of "Trackway" at the site entrance
- Wide tyres on spreading vehicles

There is a requirement for contingency planning for managing landspread operations during extreme weather conditions when access to land for spreading is either restricted or prohibited.

In some instances, there are benefits to surface spreading sludges on grassland without incorporation. Where a higher application is required to realise the benefit, best practice is that the applications are split, where possible, into two or three events to avoid a negative impact of smothering the grass.

Where sludge is to be incorporated, best practice is to incorporate thoroughly and as soon as possible after spreading. Also to have contingency arrangements in place:

- access to more than one machine, or arrangements for hire
- enough staff to cover sickness, holiday and other absence
- machinery service and repair contracts to get repairs done quickly

### e. Contract

Careful consideration needs to be given to the terms of the contract and the following recommendations are given to ensure that the right framework is in place to provide professional and responsible management and meet Duty of care obligations:

- Duty of care and permit responsibilities are clearly defined for all parties;
- The contractor undertakes to ensure regular collection and transportation of sludge as specified;
- The accident liability practices and responsibilities are defined for all stages;
- Adequate provision is made to cover liabilities and accidents;
- The size, type and suitability of vehicles are stated, including a statement on maintenance and repair schedule;
- The exact responsibilities for vehicle loading are defined;
- Procedures are defined for the transfer of ownership of the sludge through the various stages;
- The requirement to attend regular (defined) meetings to manage the contract;
- Defined payment procedures;
- Provisions for renegotiating the contract in the event of circumstances changing on either side;
- Termination conditions for both parties under various conditions as defined.

Key Process Indicators (KPIs) should be defined to ensure adequate management controls are in place throughout the process, from sludge production through to landspreading, both in terms of:

- The “quality” of the sludge – consider moisture content, odour, colour, and
- Contract management – consider tonnes to landspread, complaints, audit findings.

Action points with responsibilities should be defined for each KPI along with the purpose of that KPI.

Regular meetings should be scheduled between the Mill, contractor and expert advisors.



### f. Emergency Procedures

The emergency procedures relating to the landspreading activity should be integrated into the site Environmental Management System emergency documentation.

Events or incidents could be regarded as potential or actual emergencies if:

- There could be a threat to the continuation of the landspread activity;
- There was a spillage at the Mill or landspreading site that was not contained and entered a watercourse;
- There had been incidents reported as the potential cause of damage;
- The road conditions were adversely affected (e.g. mud on the road);
- The Mill was, as a result, exposed to financial liability for whatever reason.

Where appropriate the relevant regulatory authorities should be informed “without delay” and the necessary corrective action taken to remedy the problem..

### g. Notifications

The Environment Agency shall be notified without delay following the detection of: (a) any malfunction, breakdown or failure of equipment or techniques, accident or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution; (b) the breach of a limit specified in these standard rules; or (c) any significant adverse environmental effects.

### h. Environmental Management System

All procedures relating to the landspreading activity should be incorporated in the Mill’s (and contractor’s where appropriate) Environmental Management System, including risk assessments and complaints procedure.

### i. Audits

An independent audit programme should be put in place to audit all aspects of, and procedures relating to, the landspread activity. Audits should be part of the Environmental Management System.

In addition to the links contained within the body of this Code the following may prove useful:

### **National Waste strategies**

#### **England**

<https://assets.publishing.service.gov.uk/media/60103f71d3bf7f05bc42d294/waste-management-plan-for-england-2021.pdf>

#### **Northern Ireland**

<https://www.daera-ni.gov.uk/articles/waste-management-strategy>

#### **Scotland**

<https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2010/06/scotlands-zero-waste-plan/documents/00458945-pdf/00458945-pdf/govscot%3Adocument/00458945.pdf>

#### **Wales**

<https://gov.wales/beyond-recycling>

### **Waste management legislation**

#### **The Waste (England and Wales) Regulations 2011**

[www.legislation.gov.uk/ukxi/2011/988/contents/made](http://www.legislation.gov.uk/ukxi/2011/988/contents/made)

#### **The Waste (Scotland) Regulations 2012**

<https://www.legislation.gov.uk/ssi/2012/148/contents/made>

#### **The Waste Regulations (Northern Ireland) 2011**

<https://www.legislation.gov.uk/nisr/2011/127/contents/made>

#### **The Waste Management Licensing (Scotland) Regulations 2011**

<https://www.legislation.gov.uk/ssi/2011/228/contents>

#### **The Waste Management Licensing (Amendment) Regulations (Northern Ireland) 2009**

<https://www.legislation.gov.uk/nisr/2009/76/contents/made>

### **Guidance on landfill tax**

<https://www.gov.uk/government/publications/excise-notice-lft1-a-general-guide-to-landfill-tax/excise-notice-lft1-a-general-guide-to-landfill-tax>

### **Other Useful Sites**

#### **Netregs: (For Scotland & Northern Ireland)**

<https://www.netregs.org.uk/>

#### **Environment Agency: Guidance on Environmental Issues relevant to business in England & Wales**

[www.environment-agency.gov.uk/business/default.aspx](http://www.environment-agency.gov.uk/business/default.aspx)

#### **Water Framework Directive information site:**

<https://fwrinformationcentre.co.uk/html/the-water-framework-directive---wfd.html>

#### **EU Nitrates Directive :**

[https://environment.ec.europa.eu/topics/water/nitrates\\_en](https://environment.ec.europa.eu/topics/water/nitrates_en)

#### **United Kingdom Laboratory Accreditation Service:**

<https://www.ukas.com/>

#### **COSHH:**

[www.hse.gov.uk/COSHH/index.htm](http://www.hse.gov.uk/COSHH/index.htm)

*All web links were correct at the time of going to press*